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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/595,853

05/16/2006

Rudiger Nowak

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EXAMINER

LACLAIR, DARCY D

ART UNIT

PAPER NUMBER

1763

MAIL DATE

DELIVERY MODE

11/03/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/595,853	Applicant(s) NOWAK ET AL.	
	Examiner Darcy D. LaClair	Art Unit 1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 July 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/13/2010</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on **7/13/2010** has been entered.

All outstanding rejections, except for those maintained below are withdrawn in light of the amendment filed on **7/13/2010**.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

The amendments are supported at least at page 22 of the specification.

Claim Objections

2. Claim 3 is objected to because of the following informalities: The word "polysulfones" has a typographical error and reads "polysulfonesL". Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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3. **Claims 8 and 9** contain the trademark/trade name Aerosil. Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe the silica and, accordingly, the identification/description is indefinite.

Claim Rejections - 35 USC § 102

4. **Claims 1-2** are rejected under 35 U.S.C. 102(b) as being anticipated by **Nowak et al. (US 2001/0047047)**

It is noted that **Claim 1**, with respect to the preparation of the compacted hydrophobic, pyrogenic silica by roller compactor or pressing filter belt, are stated in product by process format.

“[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)

With regard to Claim 1, Nowak teaches the addition of pyrogenically produced oxides such as silicon dioxide, including Aerosil R202 (see par [0013]) and aerosol

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R8200 (see par [0012]) to polyurethane gels (see par [0002]) and exemplifies contents of 3% (p. 8, Example 1), 10%, 15% (p. 8, Example 2), and 5% (p. 9, Example 3) of Aerosil silica. These gels have an adjustable adhesion capability, specifically useful in application to human or animal body parts. (See par [0098]) Nowak presents hydrophilic Aerosil including the compacted product. (See par [0017]). Aerosil R8200, which has a tamped density of 140 g/l (see par [0139]), provides silica which has been compacted. These silicas, exemplified as additives (see p. 8, Example 2 and p. 9, Example 3), would render the system thixotropic, and a system which has lowered viscosity upon stirring would reduce the time required for incorporation, relative to a silica which has not been compacted. Case law holds that a material and its properties are inseparable. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990)

With regard to Claim 2, Aerosil R8200 has a tamped density of 140 g/l (see par [0139]).

5. **Claims 1-3 and 5-9** are rejected under 35 U.S.C. 102(b) as being anticipated by **Deller et al. (WO 2003/097713 A1)**

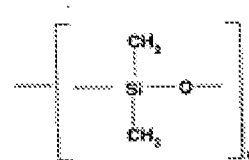
It is noted that **Claim 1**, with respect to the preparation of the compacted hydrophobic, pyrogenic silica by roller compactor or pressing filter belt, are stated in product by process format.

In setting forth this rejection a machine translation of **WO 2003/097713 A1** has been relied upon and all citations to paragraph numbers in the discussion below are with respect to the machine translation.

With respect to Claims 1 and 3, Deller teaches a composition having improved storage stability and processability and having thixotrophy. (See p. 1, pars 1, 3) This composition has from 4 to 15 weight percent of a hydrophobic fumed silica (see p. 1, Desc/Cims PAGE NUMBER 2) The hydrophobic fumed silica includes Aerosil R202 W 60 and Aerosil R202 W90, which are densified with a pressing filter belt. (See the Nowak declaration p. 3, par 6) Deller teaches the hardener or resin component (see p. 6, Desc/Cims PAGE NUMBER 9, p 7, par 5) is selected from styrenic polymers, amines, and phenols, such as phenol-formaldehyde and phenol-cresol resins, and the like. (See p. 6 - p.7) These compositions have good mixability, and are thixotropic (see p. 7 par 6) and the basis of the invention is to improve processability. Thus these compositions have a reduced mixing time, and thixotrophy.

With respect to Claims 2 and 5, the density of the silica is from 50 to 90 g/l. (See p. 1 par 4)

With respect to Claims 6-9, Deller teaches the use of Aerosil R 202 W 60 and



Aerosil R 202 W 90. (See p. 2 par 2) This has the structure
(See applicant's specification, p. 22, line 5)

Claim Rejections - 35 USC § 103

6. **Claims 3 and 5** are rejected under 35 U.S.C. 103(a) as being obvious over **Nowak et al. (US 2001/0047047)**

It is noted that **Claim 3**, with respect to the preparation of the compacted hydrophobic, pyrogenic silica, is stated in product by process format.

The discussion of **Nowak**, above in **par 3**, is incorporated here by reference.

Claim 3 requires a method for reducing the time needed to incorporate compacted hydrophobic silicas into thixotropic adhesives and sealants. The compacted silicas are provided by Degussa AG, (see par [0013]) and the compacted silicas would be made using similar processes. The silicas, having similar structure, would behave in similar manners in the polymer; therefore, these silicas would reduce the time needed to incorporate the compacted silicas into the adhesives. Upon observing this effect, which would be observed based on the exemplified compositions (See Example 1, 2, 3), it would be obvious to one of ordinary skill in the art to employ silica which provides improved processing parameters, which is determined by the time of incorporation.

Claim 5 requires that the time needed to prepare the thixotropic adhesives and sealants is shorter than would be with compacted hydrophobic silica having a compacted density of 50 g/L. The time to prepare the compositions appears to be inversely related to the compacted density of the silica, based on the thixotropic behavior of these silicas. The silicas with a higher compacted density of 75 g/l (see par [0017]) and 140 g/l (see par [0139]) would inherently have a reduced incorporation time.

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7. **Claims 1-3 and 5-9** are rejected under 35 U.S.C. 103(a) as being obvious over **Gruenewaelder et al. (WO 2001/090271)** in view of **Hasenzahl et al. (US 2002/0197311)**

It is noted that the international Patent Application WO publication is being utilized for date purposes. However, since **WO 2001/090271** in German, in the discussion below, the US equivalent for **WO 2001/090271**, namely **US 6,251,162**, is referred to in the body of the rejection below. All column and line citations are to the US equivalent.

It is noted that **Claims 1 and 3**, with respect to the preparation of the compacted hydrophobic, pyrogenic silica, are stated in product by process format.

With regard to Claim 1, Gruenewaelder teaches a polyurethane adhesive paste having a silicic acid thickener in a concentration of 2.0 to 8.0% by weight. (See abstract) Silicic acid is equivalent to silica. Gruenewaelder teaches that the thickener is intended to ensure plastic flow behavior, or in other words flows with shear stress. This silica should be a pyrogenic, hydrophobic silica. (See par [0018]) Gruenewaelder teaches Aerosil R202 (see par [0032]) but does not specifically teach compaction of this silica. Hasenzahl teaches a pyrogenic silicon dioxide with a tamped density of 80 to 250 g/l, (see abstract) preferably 100 to 200 g/l, (see par [0018]) prepared by rendering the surface hydrophobic (see par [0025]) and compaction by means of a rotary vacuum filter equipped with a compacted strip (see par [0026]), which is consistent with a pressing filter belt. Hasenzahl exemplifies Aerosil 200 VV as the compacted silica. (See par [0026]) Hasenzahl teaches that the preparation can be applied to pastes (see

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par [0032]) and has good effect as a suspension stabilizer and gelling agent, and improves mechanical stability. (See par [0010]) It would be obvious to one of ordinary skill in the art to use the treated silica of Hasenzahl in the adhesive paste of Gruenewaelder, both because of its similarity (Aerosil 200 series) and because of the good effects, including stabilizer and mechanical stability agent, which are consistent with Gruenewaelder's reasons for incorporating the silica.

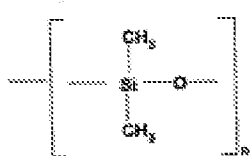
With regard to the behavior of the silica in Gruenewaelder's composition, thixotropy is specifically desired (see par [0018]) and this is in order that the composition would have its stability improved when applied (no shear) but will have a reduced viscosity upon mixing or applying (shear). This is consistent with causing a reduction in time for incorporation of the silica.

With regard to Claim 2, Gruenewaelder teaches Aerosil R202 (see par [0032]) and Hasenzahl teaches Aerosil 200 VV (see par [0026]) which has been compacted. Hasenzahl teaches that the preferred density is 100 to 200 g/l. (see par [0018])

With regard to Claims 3 and 5, Gruenewaelder teaches incorporation of the silica into a binder, and teaches the need for a reduced viscosity under shear stress. (See par [0018]) See the discussion of Claim 1 above for the discussion of the components required by this method. Achieving a reduction in stirring viscosity is consistent with **a decrease in mixing time**, because better mixing will be afforded by the reduced viscosity. It would be obvious to one of ordinary skill in the art to employ the viscosity reducing silica in order to reduce the mixing time to incorporation.

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With regard to Claims 6 and 7, Aerosil R 202, which is taught by Gruenwaelder,



has the grouping , (see applicant's specification, p. 22, line 5)

With regard to Claims 8 and 9, Gruenwaelder teaches the use of Aerosil R 202 and Hasenzahl teaches compacting this to a density of 80 g/l to 250 g/l using a pressing filter belt, which is denoted with a VV, which encompasses the compaction of the Aersosil R202 VV 90 product, and is thus structurally the same as this product.

Response to Arguments

8. Applicant's arguments filed **7/13/2010** have been fully considered. Specifically, applicant argues

(A) The issue in this case involves the previously submitted evidence in the Nowak Declaration, and whether that evidence overcomes any alleged prima facie case of obviousness.

(A.1) With respect to the question of whether or not Aerosil R8200 is a structure modified, hydrophobic fumed silica destructured by ball mill, applicants have provided TEM pictures showing a difference in the structure of Aerosil R8200. The thickening effect of the R 8200 is significantly lower compared to, for example, Aerosil R 202 VV 60 or Aerosil R 202 VV90. The thixotropic index of an epoxy filled composition for R8200 is 1.3, the thixotropic index for 202 VV 60 is 5.2, and the thixotropic index for 202 VV90 is 5.1. Systems having a Thixotropic index of higher than 3 are very thixotropic,

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systems having a thixotropic index of almost 1 or smaller have no thixotropy.

Furthermore, the most relevant comparison for the issue in this case is between Aerosil R 8200, which is destructured with a ball mill, and Aerosils which have been destructured with a roller compactor or pressing filter belt. Further, applicant reports that the technical director of the customer of Evonik Degussa told Evonik Degussa that the shorter incorporation time of 18 minutes using Aerosil R 202 W 90 compared to 25 minutes using Aerosil R 202 is significant and relevant, And that comparable results were seen in a variety of polyurethane adhesives. Attention is also directed to Attachment 2, which shows the rheological properties of Aerosil R8200 vs. Aerosil R812 W 60, which shows that the rheological properties are not alike.

(A.2) In response to the examiner's comment that no weight percent is given, applicants are indeed able to show that the compositions tested fell within the range of 1 to 15% as recited in the claims.

(A.3) Aerosil 150 is a hydrophilic fumed silica grade. The claims require a hydrophobic pyrogenic silica.

(B) Although Meyer does not limit compacting to a ball mill method, the combination of Meyer and Klinge would not inherently produce a reduction in the mixing time for the silica. Klinge does not show that the hydrophobic densified silicas densified by the pressing filter method have shorter incorporation times, or that hydrophobic densified silicas perform better than hydrophilic densified fumed silicas. These silicas do exhibit reduced incorporation time, however the thickening and thixotropic decrease is too high for industrial use. Incorporation time and viscosity is shown for Aerosil 150

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and Aerosil 150 W90 in a sealant. Furthermore, the combination of Klinge and Meyer would not result in a useful product. The Klinge densification can not achieve the compaction of Meyer, and the thixotropic and thickening properties of the silicas would be destroyed; Meyer uses a ball mill which destructures the ball mill.

(C) With respect to the rejection over the Gruenwaelder reference, the examiner refers to silica having a density of 80 to 260 g/l, presumably referring to the density taught by the Hasenzahl reference. Gruenwaelder teaches fumed silica adjusts pseudoplastic behavior and thixotropy for polyurethane adhesives. This is correct, but refers only to the finished compound when the silica has been fully incorporated and dispersed, and not to the silica in the process of being incorporated. Pseudoplasticity is not yet developed when the silica is in the process of being incorporated. Hasenzahl does not teach that by using a special densified hydrophobic fumed silica, the incorporation time can be decreased while maintaining rheological and thixotropic properties. Hazenzahl teaches that the flowability of pharmaceutical and cosmetic preparations is higher than state of the art preparations when densified silica is used, And that mechanical stability is increased. No motivation to combine Gruenwaelder and Hasenzahl is provided. Thus the rejection is improper and should be withdrawn.

9. **With respect to argument (A)**, applicant's arguments have been considered but are **not persuasive**. It is noted that the rejection of Claims 1 and 2 is over 102(b) and therefore this rejection can not be overcome by a showing of non-obviousness. Rather, in this case, a showing of process criticality is required in order to demonstrate that the

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process is patentably distinct. (A.1) With respect to the limitations of Claim 1, the language of the claim requires that the adhesive and sealant composition is rendered thixotropic, but the claim does not indicate how thixotropic the composition must be, either qualitatively (for example, highly, very) or numerically (for example, 3 or greater). Thixotropy is a measure of the difference in the viscosity of a composition at high shear and at low shear, in other words, the effect of shear on the viscosity, and can be reported as a ratio of the viscosity at high shear and low shear (or at rest). This is shown by a thixotropic index. Applicant has noted that a thixotropic index of higher than 3 is very thixotropic, while a thixotropic index of almost 1 or smaller is not thixotropic. (See Remarks, 7/13/2010, p. 7) Thus a thixotropy index of 1 has no thixotropy; the viscosity is the same at high and low shear. Any composition having a thixotropy index of greater than 1 is a composition having some thixotropy (or some degree of reduced viscosity at high shear). Thus the reported thixotropy of the tamped (compacted) R8200 product of 1.3 is a composition which has some degree of thixotropy. Additionally, Evonik specifically cites the R8200 product for use in thixotropy. This suggests that thixotropy is an expected feature of the R 8200 product.

System	AEROSIL® grades	Concentration in wt. %	Effects	Dispersion equipment
I-K Silicone (RTV-1)	AEROSIL® 130	7-10	Anti-Sag,	Planetary-Dissolver, Press-Mixer, Extruder
	AEROSIL® 150		Thixotropy,	
	AEROSIL® R 972		Reinforcement,	
	AEROSIL® R 974		Improves Transparency	
	AEROSIL® R 105		(R 105, R 812 S),	
	AEROSIL® R 812 S		Self-leveling	
	AEROSIL® R 8200		(R 8200, R 812 S),	
	AEROXIDE® TiO ₂ 25	1-2	Thermal Stability (TiO ₂ 25)	

(See Evonik) Thus based on the current claim language, the showing of applicant is not sufficient to demonstrate that there is criticality in the process in terms of achieving

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the limitations as currently claimed. The photo of both Aerosil R8200 and the roller compacted or pressing filter compacted silicas are noted, however the visible difference does not automatically lead to a difference in the adhesive and sealant composition product. The silica is described using product by process language, however the product of the claims is the adhesive and sealant composition, and the properties associated therewith. It is noted that the difference in the viscosity between the respective demonstrated conditions appears to be sufficient to show criticality of the process should applicant further specify the degree of thixotropy.

(A.2) Although applicant has given a weight percent of 3.85% for the comparison of Aerosil R8200, R202 VV60 and R202 VV90 in the remarks, this is not reported in either the specification or the submitted Nowak Declaration. Thus this is an allegation of the content, and not considered evidence.

The arguments of counsel cannot take the place of evidence in the record. In re Schulze, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965); In re Geisler, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997) ("An assertion of what seems to follow from common experience is just attorney argument and not the kind of factual evidence that is required to rebut a prima facie case of obviousness."). See MPEP § 716.01(c) for examples of attorney statements which are not evidence and which must be supported by an appropriate affidavit or declaration. See MPEP 2145[R-6]

With respect to (A.3), although Nowak teaches Aerosil 150, which is hydrophobic, the disclosure also teaches hydrophilic compacted silicas.

With respect to argument (B), applicant's arguments have been considered. Upon further consideration, the rejection over Meyer and Meyer in view of Klinge are withdrawn. Meyer relies primarily upon hydrophilic silica, and Klinge teaches hydrophobic silica. Thus it would not be obvious to combine these references.

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With respect to argument (C), applicant's arguments have been considered but are **not persuasive**. Contrary to applicant's argument that there would be no motive to combine Gruenwaelder and further, that no motive is given, the examiner has previously cited the following motive:

Hasenzahl teaches that the preparation can be applied to pastes (see par [0032]) and has good effect as a suspension stabilizer and gelling agent, and improves mechanical stability. (See par [0010]) It would be obvious to one of ordinary skill in the art to use the treated silica of Hasenzahl in the adhesive paste of Gruenewaelder, both because of its similarity (Aerosil 200 series) and because of the good effects, including stabilizer and mechanical stability agent, which are consistent with Gruenewaelder's reasons for incorporating the silica. (See **paragraph 7** of the office action mailed **12/14/2010**)

While this is not necessarily applicant's motive, this is a strong motive to use compaction to treat the silica of Gruenwaelder by the method of Hasenzahl. The fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). Thus the motive to use the compacting method of Hasenzahl to stabilize the composition of Gruenwaelder, and to improve its mechanical stability would provide strong motivation to a person of ordinary skill in the art to combine the teachings of these references. With regard to applicant's argument that Gruenwaelder only teaches that pseudoplastic behavior and thixotrophy are affected when the silica is incorporated, and not during the process of incorporation, first, during the incorporation process, some of the silica would be present within the composition, and some not within the mixture. The silica present within the composition would have an effect on thixotrophy and thus there would immediately be a reduction in viscosity at high shear

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per the content of silica being blended. This reduction in viscosity would cause a decrease in mixing time because other silica particulate would be more readily incorporated into a less viscous composition. Additionally, the effect of the silica of Gruenwaelder in view of Hasenzahl would be consistent with the effect of applicant's silica because these silicas would have identical properties. Thus once motivation to combine these references is established, for the same or different reasons than that of applicant, the effect of the silica is a physical constant; Compacted Aerosil R 202 has a thixotropic effect and reduces incorporation time.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Darcy D. LaClair whose telephone number is (571)270-5462. The examiner can normally be reached on Monday-Friday 8:30-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on 571-272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Milton I. Cano/
Supervisory Patent Examiner, Art Unit 1763

Darcy D. LaClair
Examiner
Art Unit 1763

/DDL/